

# Water Lines

## ***Featured Facility:***

### **Tonopah - A Job Well Done**

*Collaboration between NvRWA, Tonopah and NDEP staff*

Many of you have dealt with the additional efforts placed upon system personnel during the planning and construction of major projects. One system stands out with its dedication to a water project that spanned 11 years from start to finish. That system is Tonopah Public Utilities (TPU). With arsenic concentrations of approximately 12 parts per billion (ppb) and aging infrastructure, TPU had to determine the most cost effective way to meet the new arsenic standard and remain sustainable. They did this by methodically addressing the issues with staff, consultants, decision makers, and state agencies.

The water supply supporting the Town of Tonopah originally came from eight groundwater wells situated in the Rye Patch area of the Ralston Valley. The water was conveyed via approximately 14 miles of transmission main and two booster pump stations to the Town. The well field was installed in the 1940's and all of the wells were in need of refurbishment or replacement. The water transmission system had been in service since the early 1900's; with upgrades to portions of the transmission main made in 1940 and 1960. The transmission main from the well field to Tonopah ranged in size from 8-inch to 14-inch pipe and was also in need of replacement. In addition, the water supply had an average arsenic concentration of 12 ppb, just over the revised MCL, and the TPU needed to come into compliance with the state and federal arsenic standard.

In an effort to mitigate all of the issues, the Town had a preliminary engineering report (PER) completed. After reviewing the condition of the existing assets and all possible alternatives, the PER concluded that the transmission main was beyond its useful life expectancy and contained capacity restrictions for delivering the projected peak day demand. The peak day demand, which could be supplied by the well field to the Rye Patch tanks, was not capable of being pumped through the two booster stations and transmission main to the Town. Replacement of the entire transmission main was the only realistic alternative. All of the wells were inspected via remote video, and all showed significant mineralization plugging the screened area and significantly reducing production. Rehabilitation or replacement was definitely necessary to restore the existing well field.



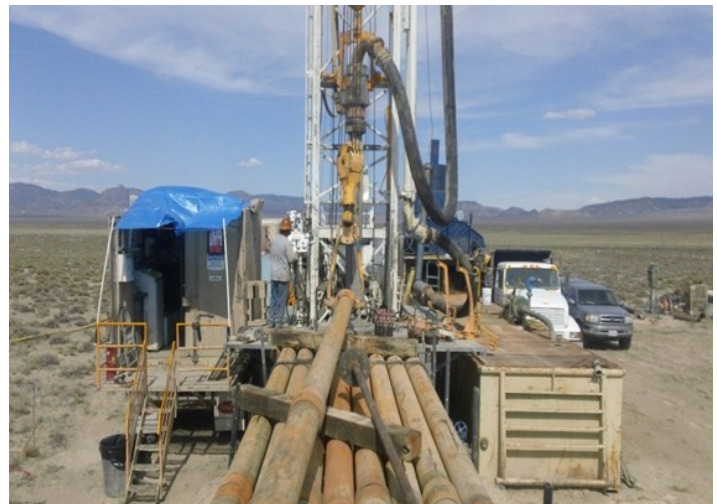
*Cont' on pages 2*

## ***Cont' - Tonopah - A Job Well Done***

The original PER recommended an arsenic treatment plant be built to mitigate the arsenic issue because it was thought that the probability of finding a groundwater source that met the new arsenic standard would be very costly and unrealistic due to the additional time required to do a hydrogeologic investigation; acquire land or easements; complete geotechnical studies, surveying, and engineering design; and comply with all environmental assessment requirements. TPU believed that, due to the short and long term consequences of constructing and then forever maintaining a water treatment plant, it would justify the additional effort and cost to further investigate a new groundwater source as a possible alternative. TPU contracted with a new consultant to perform a thorough hydrogeologic survey that included exploratory drilling in four strategic areas, test pumping, and water quality sampling. Ultimately, the test well in northern Ralston Valley, approximately 4.5 miles north of

the Rye Patch well field, proved to be the 'Goldilocks' well for both quality and quantity.

The facilities necessary for integrating the new well site into the existing system included 2 new groundwater wells and a new transmission main to the Rye Patch well field. Due to the elevation of the new well site in relation to the existing booster pumps stations, hydraulic modeling demonstrated that the Rye Patch booster station could be eliminated, thereby providing significant energy cost savings to TPU.



### **Inside This Issue**

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In an effort to maximize the utilization of the existing infrastructure, minimize cost and provide an added level of redundancy via two well fields, it was decided that 4 existing TPU wells would be rehabilitated and re-equipped. The 4 wells chosen for this effort (Wells 5 – 8) had average arsenic levels that ranged from 9-10 ppb and could be blended with the water from the new wells to keep TPU in compliance with the arsenic MCL. With the capacity of the refurbished wells, the new wells were equipped to produce only the volume necessary to meet the Town's anticipated peak day demand. The new wells in the northern well field have additional capacity that can be tapped in the

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## ***Cont' - Tonopah - A Job Well Done***

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future by simply changing the pumps. All of the wells were equipped with submersible pumps as they were more economical than vertical turbine pumps and were more easily secured and protected which was an important consideration due to the remote location of the well sites.

The overall project was constructed in 2 phases. Phase 1 included the drilling, construction, and equipping of the 2 new wells; the 14-inch transmission line from the new wells to the existing well field; refurbishing and re-equipping 4 of TPU's existing wells; installing a replacement 14-inch transmission main through the existing well field to the Rye Patch tanks; and replacing a portion of the old transmission main from the Rye Patch tanks to the second booster station (which became the only booster station after this phase of the project). Phase 2 completed the replacement of the remaining transmission main to the Ararat Tanks in Town and replaced the existing booster station pumps and added VFD control on these pumps. Approximately 19.5 miles of new 14-inch transmission main from the new wells in the North Ralston Valley to the distribution system in Town were ultimately installed through these 2 project phases. To maximize longevity of the pipeline, strict criteria were specified and followed for all bedding materials and soil compaction.

TPU was able to obtain joint funding packages from the Drinking Water State Revolving Fund (DWSRF) and US Department of Agriculture – Rural Development (USDA-RD) that resulted in the design and construction of both phases in less than 3 years. This community qualified as a disadvantaged community, and the DWSRF was able to provide a combined \$2.76 million in principal forgiveness loan for the 2 phases. TPU was able to assume approximately \$5.8 million in loan and an additional \$2.6 million in

grant from the USDA-RD to match the DWSRF funding and complete both phases. TPU is a fiscally responsible utility with annual savings for capital replacement and short-term asset replacement. The elimination of one booster station and the addition of energy efficient pumps and new VFDs at the remaining booster station created additional short and long term savings. The annual energy savings alone is currently estimated at \$30,000.



Finding a new source, drilling new wells, laying some 19.5 miles of transmission main, and replacing the booster pumps while making the improvements affordable to the customers was no small feat. The project came with many hurdles including: conducting an income survey that ultimately qualified them for grants and lower interest loans; completing a full environmental assessment (with cultural and biological surveys) for the entire length of the transmission system in order to secure the amended right-of-way for those portions of the project crossing public lands; increased expense for inspection and testing during construction due to the many crews working simultaneously in different locations; hard rock excavating; and federal mandates (such as

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**Work It! Q & A**

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1. A water plant uses four pressure vessels that run in series. They are backwashed one at a time while the others remain in service. The vessels are 10 ft. in diameter and 12 ft. high. If the raw water rate of flow is 1,250 gpm, what are:
  - a. the empty bed contact time (EBCT), minutes, during backwash, and
  - b. the filtration rate, gpm/ft<sup>2</sup>, for the three filters during backwash?
2. A 100 mL sample is collected and analyzed for alkalinity by titrating to a pH 4.5 endpoint using 61.2 mL of 0.002 N H<sub>2</sub>SO<sub>4</sub>. No phenolphthalein alkalinity was observed. What is the total alkalinity, mg/L CaCO<sub>3</sub> ?
3. Find the F/M ratio where influent flow is 1.4 MGD, aeration basin volume is 1.25 MG, MLVSS is 1,975 mg/l and influent BOD<sub>5</sub> is 165 mg/L.
4. The target free residual chlorine in a drinking water distribution system is 0.6 mg/L and the total residual is found to be 0.4 mg/L while the free chlorine residual is non-detect. Which answer(s) below describe the risks? (select all that apply)
  - a. The demand will decrease and the free residual will bounce back, no problems
  - b. The total residual might drop to non-detect, resulting in no disinfection
  - c. Taste and odor complaints might increase due to uncontrolled chloramines or chloro-organics. The low residual might indicate contamination problem, such as from a cross-connection
  - d. Everything is ok, there is no unusual risk
5. In water and wastewater systems finance, the Operating Ratio is the ratio of:
  - a. Total Revenues / Capital Improvement Restricted Funds
  - b. Total Revenues / Total Operating Expenses
  - c. O&M Expense / Debt Service Cost
  - d. O&M Expense / Total Billed Service

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**Cont' - Tonopah - A Job Well Done**

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paying the higher of Davis-Bacon federal or state prevailing wages) that had to be observed. TPU is an excellent example of a system that possesses very high technical, managerial, and

financial capacity. If this project wasn't enough, TPU is already looking toward the future and other projects identified in the PER that will rehabilitate and/or enhance the system.

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## Tier 1 Notification Needed - What Must I do NOW?

By: Bob Foerster, NvRWA

**Notification** – hopefully things never come to this, but when they do, you must take action. Fence-sitting is not an option. If you can reasonably envision needing to issue a public notification, you should plan and practice for that day. Plans need to be reviewed, not just because updates might be needed, but so that you will have in mind the actions you need to take.

### NOTIFY THE NDEP - BUREAU OF SAFE DRINKING WATER (BSDW) IMMEDIATELY

Although the Public Notification Rule gives 24 hours to make notification, ask yourself why would anyone wait that long to notify either their customers or the Bureau? As soon as practical should be your standard. Got a phone in your pocket? Got the 24-hour number in it?

If there is any doubt in your mind about whether a situation might require public notification, make that call to the BSDW. Start a discussion to get help with the decision. If your Facility Manager is not in at the BSDW or can't come to the phone, ask to speak with someone else immediately. You won't need to go into a lengthy explanation in an initial call. You will be busy, and it is ok to give a brief summary – they know you are dealing with an urgent situation and that getting your customers notified is the priority (probably along with repairing something). Think of the agency as one of your partners in protecting public health. Do not hesitate; every situation is different, and talking with the BSDW staff might bring to light some ideas for dealing with the situation that aren't in your emergency response plan. Your partners can help you with the public notification language to be sure that all of the required elements are addressed for the specific situation. They may be able to help in other ways. Let them know when you will be making a follow-up call or when they should call you

back. Note, as a PWS you will need to send a certification of compliance and a copy of the completed Notice to the Bureau within ten days. The recordkeeping requirement is three years.

**SOME THINGS YOU CAN DO TODAY, WHEN THE EMERGENCY SITUATION IS NOT UPON YOU.** Contact your police or sheriff / dispatch and fire department; let them know who on your staff to call when they become aware of *any* water related issues, from customer complaints to vandalism to damaged hydrants. Be sure they understand that you *want* them to call. Give them your staff call-out schedule and consider putting them on system auto-dialers in case there is a delay in alarm acknowledgement by your staff.

Review the notification practices in your emergency response plan and compare them to the PN Rule. Rapid means of notification are needed in urgent situations. This means *action*, so identify what actions you will take, through radio, television, going door-to-door with flyers, loudspeakers on a car, getting NDOT emergency signage at the roadside, posting conspicuously or other measures. Posting alone would not match the urgency of a Tier 1 situation and you need to meet the standard of using all reasonable means to reach all people served. Plan to do all that you can do.

Put reverse 911 calling in place and keep it up to date. This will take some time, since many customers won't have landlines and will need to provide you with their cell phone contact information. Establish volunteer telephone call trees.

With home medical treatment becoming commonplace, know which customers need particular notification, and how to contact them and/or their designated caregivers or relatives. Let your customers know that they need to

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## ***Cont' - Tier 1 Notification Needed - What Must I do NOW?***

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inform you about home medical treatment or other situations where anyone is depending on an uninterrupted water supply.

Refresh your contacts with the NDEP Bureau of Water Pollution Control and review the system's blanket permit with respect to disposal of spent chlorine solutions.

Know who is who in Emergency Management at the County level. When you have a problem, get the emergency management people involved early. Annual plan review is a good time to refresh all of the contacts, if for no other reason, just to keep in touch. Participate in area-wide exercises.

Join [NvWarn.org](http://NvWarn.org), the Nevada Water/Wastewater Agency Response Network, in order to have rapid access to equipment and other resources in an emergency.

Conduct table-top exercises, not just for those disaster-level events like earthquakes, but for the situations that result in boil water advisories or other public notification. Good candidates for practice might include: someone opened the remote storage tank hatch and it is unknown whether there was contamination; complaints about unusual taste or appearance in the water; loss of system pressure or dropping reservoir level with no known cause; telephone threat of contamination or suspicious activity observed; or a sudden drop in chlorine residual or positive bacteriological results. Go into detail on who does what, stressing the need to recognize the gravity of the situation, openly communicate, and also follow the regulations. NvRWA can lead one or more exercises with your group. Involve your whole staff and follow up to address any weaknesses with improved standard operating procedures, clarification of duties, or other measures, aiming to do a better job next time.

Review the PN Rule and know your duties for all levels of notification. Here is a link to the Quick

Reference Guide à [http://www.epa.gov/ogwdw/publicnotification/pdfs/qrg\\_publicnotification.pdf](http://www.epa.gov/ogwdw/publicnotification/pdfs/qrg_publicnotification.pdf)  
Here is what the QRG spells out on the Tier 1 Public Notification:

*Tier 1 Public Notification is required to be issued as soon as practical but no later than 24 hours after the PWS learns of the violation or situation including:*

- *Distribution system sample violation when fecal coliform or E. coli are present; failure to test for fecal coliform or E. coli after initial total coliform distribution system sample tests positive.*
- *Nitrate, nitrite, or total nitrate and nitrite maximum contaminant level (MCL) violation; failure to take confirmation sample.*
- *Chlorine dioxide maximum residual disinfectant level (MRDL) violation when one or more of the samples taken in the distribution system exceeds the MRDL on the day after a chlorine dioxide measurement taken at the entrance to the distribution system exceeds the MRDL, or when required samples are not taken in the distribution system.*
- *Exceedance of maximum allowable turbidity level, if elevated to a Tier 1 notice by primacy agency.*
- *Waterborne disease outbreak or other waterborne emergency.*
- *Detection of E. coli, enterococci, or coliphage in a ground water source sample.*
- *Other violations or situations determined by the primacy agency.*

Let's look at just one sort of incident where public notification would be part of a sensible course of action. It can be presumed that a high risk incident such as a main break with loss of pressure will result in some contamination. Consider what will qualify as a loss of pressure. Twenty (20) psi is the minimum allowed in

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**Cont' Tier 1 Notification Needed - What Must I do NOW?**

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design (**NAC 445A.6711**), and pressures lower than 20 psi greatly increase the risk from cross-connections. Now consider that normally there won't be a pressure gauge in the trench to record the pressure where repairs are being made. A backpressure type cross-connection could be providing the pressure behind the outflow observed. A backsiphonage event could be happening. A documented course of action including communication with BSDW, disinfection, precautionary boil water notice, and bacteriological sampling will provide you with data showing exactly what conditions exist and provide you with your next needed direction to take (remember, most likely not every event will be the same). Nevada regulations make it clear that, with a loss of pressure in *any part* of the distribution system, after notifying the public and BSDW (Boil Water Order templates are available as well as lifting of the Boil Water Order templates), you will need to disinfect upon repair, test and document the residual chlorine concentration, flush highly chlorinated water to waste using de-chlorination tablets and a sock or diffuser with testing to document dechlorination was achieved, test until your system chlorine concentration has returned to normal, and then collect the required number of samples for two consecutive days (a minimum of 24 hours apart) to demonstrate that the water meets bacteriological quality standards. Only then can you get approval from the BSDW to lift your Boil Water Notice and return your system to normal.

This means that, even if you do not routinely disinfect, you need to have access to personal protective equipment and fresh NSF chlorine (sodium hypochlorite solution or tablet or granular calcium hypochlorite), an approved chlorine residual test kit (and have staff in compliance with the initial demonstration of competency), and be able to follow the standard disinfection procedures and spent chlorine solution disposal requirements called out in the regulations. This is where shared equipment

might be practical, for example, nearby systems could arrange to share a dechlorination contactor and chemical supply (de-chlorination tablets and equipment can be very expensive). Consider also, if your "event" does not entail a loss of pressure, still issue a precautionary Boil Water Notice, follow the bacteriological sampling protocol and call your support network. BSDW staff should hear from you first; you can assume that they will be getting calls from your customers. After all, the bottom line is to protect public health and keep communications open, and by following these procedures you have the assurance that your system has met those goals. Drill on the things that are likely to happen and know your next move. Going 'by the book' (which means the AWWA C651 Standard, the NAC, and the 24 hour phone number to the BSDW) will only help you. Still have questions? Give us a call at NvRWA – we're here to help.

**NAC 445A.67265 Duties after loss of pressure in distribution system.** (NRS 445A.860) Except as otherwise authorized by the Division, if any part of a distribution system loses all pressure, the supplier of water shall, before placing that part of the distribution system back into service:

1. Inform the customers of the public water system within the affected portion of its area of service of the need to boil their water before consumption.
2. Collect, on 2 or more consecutive days, samples of water from that part of the distribution system which indicate that the presence of any coliform bacteria complies with primary standards.

**NAC 445A.6727 Requirements after cleaning or repair of water main.** (NRS 445A.860)

1. Except as otherwise provided in subsection 2, after a water main is cleaned or repaired,

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## ***Cont' Tier 1 Notification Needed - What Must I do NOW?***

and before the water main is placed back into service:

- (a) The water main must be disinfected in accordance with *American Water Works Association Standard C651*, as adopted by reference in NAC 445A.6663. The disposal of any spent chlorine solutions must be coordinated with the Bureau of Water Pollution Control of the Division.

- (b) An analysis of the water main which indicates that it meets primary standards for coliform bacteria must be obtained and reported to the Division or the appropriate district board of health.

2. Compliance with subsection 1 is not required if a water main is kept full of water under continuous pressure while it is being repaired.

## **Announcements**

**Obtaining Contact Hours and Continuing Education Units (CEUs) is a crucial requirement for every Water Operator that works in the State.**

**These classes allow Water Operators to further develop their skill levels, they will not only be better prepared to provide and protect safe drinking water, but will become more familiar with new developments in their field as technology and regulations change.**

**The NDEP's Bureau of Safe Drinking Water has a Calendar of Events for approved contact hour classes for certification renewal. The NDEP requires operators to take courses from International Association of Education Training (IACET) authorized providers or accredited colleges in order to apply for the Grade 3 & 4 exams.**

### **Change of Mailing Address Requested:**

**Operator Certification Administrators have noted that a number of certificates are being returned to the State because Operators have not updated their mailing addresses after moving. Operators are asked to promptly notify the State when they have changed addresses. Please contact Susan Bunch with the Bureau of Safe Drinking Water at: [susan\\_bunch@ndep.nv.gov](mailto:susan_bunch@ndep.nv.gov) or 775-687-9477**

### **Wastewater Exam dates for 2014:**

**Exam date - 12/18/14      Deadline - 11/18/14**

**Exam date - 3/19/15      Deadline - 2/19/15**

**Exam date - 6/18/15      Deadline - 5/18/15**

**Exam date - 9/17/15      Deadline - 8/17/15**

## Answers to the Work It! questions

1.
  - a. Total vessel volume:  $0.785 \times 10 \text{ ft} \times 10 \text{ ft} \times 12 \text{ ft} \times 7.48 \text{ gal/Ft}^3 \times 3 \text{ ea.} = 21,138 \text{ gallons}$   
 EBCT =  $21,138 \text{ gallons} \times 1 \text{ minute} / 1,250 \text{ gallons} = 17 \text{ minutes}$
  - b. Cross-section area =  $0.785 \times 10 \text{ ft} \times 10 \text{ ft} \times 3 \text{ ea.} = 235.5 \text{ ft}^2$   
 $1,250 \text{ gpm} / 235.5 \text{ ft}^2 = 5.3 \text{ gpm/ft}^2$
2.
 
$$N_1 V_1 = N_2 V_2$$

$$61.2 \text{ mL} \times 0.002 = N_2 \times 100 \text{ mL}$$

$$0.1224 / 100 = N_2 \text{ moles of CaCO}_3 / \text{Liter}$$

$$0.001224 = N_2 \text{ number of moles of CaCO}_3 \text{ determined to be in 0.1 L sample}$$

$$\text{CaCO}_3 \text{ gram-molecular weight } 100 \text{ and one mole is half that, } 50 \text{ g } \text{Ca}^{+2} + \text{CO}_3^{-2}$$

$$0.001224 \text{ moles/L} \times 50 \text{ g / mole} = 0.0612 \text{ g/L}$$

$$0.0612 \text{ g/L} \times 1000 \text{ mg/g} = 61.2 \text{ mg /L CaCO}_3 \text{ Total Alkalinity}$$

*\* Remember that for alkalinity, the solution strength and sample volume are set up so that 1 mL of titrant corresponds to 1 mg/L CaCO<sub>3</sub>*
3.
 
$$\text{Lb food / Lb biomass} = (8.34 \times 1.4 \text{ MGD} \times 165 \text{ mg/L}) \div (8.34 \times 1.25 \text{ MG} \times 1,975 \text{ mg/L})$$

$$= (1.4 \text{ MGD} \times 165 \text{ mg/L}) \div (1.25 \text{ MG} \times 1,975 \text{ mg/L})$$

$$= 231 \text{ lb/d} \div 2,469 \text{ Lb/today}$$

$$= 0.09 \text{ F/M}$$
4.
 Answer: ( b, c )
5.
 Answer: (b); an Operating Ratio >1.0 is an indicator of financial stability

## Wastewater Operators Certified



**Congratulations to the following wastewater professionals for passing their Wastewater Treatment, Wastewater Collection, Industrial Waste Inspector and Plant Maintenance exams in March, April, June and September 2014.**

### WASTEWATER TREATMENT GRADES

**Grade 1:** Justin Adie, Carlo Catarata, Shawn Davis, Angelica Lacroix, Louis Lani, Nathan McIntyre, Jordan Nay, Joshua Nordloh, Bryan Osborne, Aaron Stickley, Jon Yoffee

**Grade 2:** Kenneth Johnson, Jason Pengelly

**Grade 3:** Brianne Accola

### NEVADA INDUSTRIAL WASTE INSPECTOR

**Grade 1:** Phil Tousignant

### NEVADA PLANT MAINTENANCE

**Grade 1:** Luis Ibarra

**Grade 3:** Steve Bennett, Lee Jaszowski

### NEVADA COLLECTION

**Grade 1:** Eric Johnson, Bryan Osborne

**Grade 2:** Jason Dukek, Ryan Miller

**Grade 4:** Alex Macri

### NEVADA WASTEWATER LABORATORY

**Grade 1:** Christopher Martin

## Water Operators Certified



**Congratulations to the following water professionals passed their Water Treatment and Water Distribution exams in March and June 2014.**

### Water Distribution Grades:

**Grade 1:** David Bannister, Dennis Becker, Jonathan Bell, Mathew Bell, Ken Benson, Jackie Boado, Tyler Brent, Byron Brice, Kevin Brown, Gregory Byers, Robert Calvin, Gustavo Chavez, James Cole, Jeffrey Collins, Kevin Cornejo, Gilbert Cruz, Michael Dishari, Lorraine Eastman, Lisa Farmer, Amanda Filut, Wilber Frehner, Jessica Gearhart, Jack Gress, Steven Griffin, Brandon Harris, Robert Herren, Joshua Hess, Blake Hiller, George Holcomb, Scott Hooker, Clarence Howard, Jesse Howard, Ryan Jankowski, Adam Jones, Paul Kati, Dave Kimsey, Mica Leatham, Antone Lebard, Jamie Marche, Ruthan Martin, Matteo Mastrovalerio, Kevin Mcadoo, Jeramy Millim, Coby Moke, Dennis Montoro, Erika Moonin, James Murray, Larry Ortiz, Robert Owen, Arron Palmer, Steven Parrish, Todd Pickle, Joe Pomeroy, Irving Powers, Jennifer Quilici, Philip Reed, Richard Rossnagel, Shawn Ruddell, Weston Shakespear, Nicholos Shanto, Jung Min Shin, Trevor Smith, Rick Snider, David Speakman, Prentiss Spight, Cherri Steele, Tammy Stewart, Ron Terifaj, Abdul-Rahman Toubat, Sean Tucker, Jason Webb, Donn Williams, Mitchell Ziemer.

**Grade 2:** Bradley Baeckel, Mark Bailey, David Bannister, Janelle Boelter, Gregory Brown, Shawn Burt, Timothy Cole, Michelle Cuellar, Robert Devaney, Jay Flakus, Justin Gerard, Miguel Gutierrez, Gerald Hammer, Ozwald Henke, Joshua Hess, Noah Hoefs, Christopher Hoffert, Mica Leatham, Jose Leon, Ronald Lovely, Thomas McCullough, James Moore, Ronald Nordmeyer, Jason Ormiston, Christopher Orton, Dave Pardew, Chad Payne, Jason Pengelly, Daniel Peterson,

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**Cont' Water Operators Certified****TRAINING CALENDAR**

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Daniel Rotter, Daniel Sandoval, Jeffrey Scott, Jack Sell, Troy Tanner, Jason Webb, Donn Williams.

**Grade 3:** Victor Bitter, Dean Cernick, Brian Green JR, Adam Hayes, Kenneth Howard II, Tanner Humphrey, Randall Klessig, Christopher Maes, Matthew Martensen, William McMullin, Drew Morris, David Mothershead, Paul Robb, Samuel Shamblyn, Adam Shay, Tyler Viani, Steve Welch.

**Grade 4:** Ryan Kolda,

**Water Treatment Grades:**

**Grade 1:** Tiffany Anderson, Edward Barck, Jackie Boado, Janelle Boelter, Matthew Brems, Gregory Brown, Javier Cuellar, Miles Davies, Robert Devaney, Jay Flakus, Anthony Freitas, Jessica Gearheart, Heather Granby, Kenya Henderson, Leonardo Hernandez, Duane Johnson, Paul Kati, Antone Lebard, William McInnis, Holly McNaught, Erika Moonin, Scott Moss, James Murray, Adam Owsley, Aaron Palmer, David Palmer, Steven Parrish, Bobby Patterson, Bryan Plum, David Raynor, Daniel Rotter, Jack Sell, Nick Shakespear, Ron Terifaj, Abdul-Rahman Toubat, Rebecca Sawyer Williams.

**Grade 2:** Janelle Boelter, Miles Davies, George Dean III, Blake Hiller, Noah Hoefs, Chad Payne, Chuck Sweeney, Bryce Twichell, Kevin Volpa, Uriah Wise, Brad Wunderlich.

**Grade 4:** Christopher Maes, Tyler Viani.

**Ongoing On Site - Various Management, Board, Wastewater and Water Topics, at your request -** NvRWA, <http://www.nvrwa.org/>

**Contact:** Bob Foerster at 775-841-4222

Upon Request: Instructor-Lead CSUSac Courses: Distribution or Treatment, 6 - 8 weekly trng. Contact NvRWA for details and to schedule. Also offering water and wastewater classes powered by SunCoast Learning Systems. Water Courses have been approved for recertification hours.

**NDEP Bureau of Safe Drinking Water** - training calendar for approved classes:

<http://ndep.nv.gov/dwo/main/calendar.html>

**Nevada Section of the American Water Works Association.** Visit the web site [www.ca-nv-awwa.org](http://www.ca-nv-awwa.org) for many more education opportunities

**American Water College** -

<http://americanwatercollege.org/>

**Montana Water Center** -

<http://watercenter.montana.edu/training/ob2005/default.htm>

**Office of Water Programs at the California State University, Sacramento** -

<http://www.owp.csus.edu/courses/catalog.php>

**Check out ongoing Training from RCAC at:**

<http://www.rcac.org>

**Nevada Water Environment Association (NWEA)** has an approved course list on their website:

<http://nvwea.org/> and they also grant blanket

approval for training from the following organizations:

**NWEA online Training Calendar** -

<http://nvwea.org/certification/training-opportunities>

**NvRWA's Annual Conferences** -

<http://www.nvrwa.org/>

**Tri-State Seminar On-the-River** -

<http://www.tristateseminar.com/>

**Water & Wastewater Education and Training** -

<http://wwet.org/>

**Water Environment Federation** – [www.wef.org](http://www.wef.org)

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STATE OF NEVADA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF FINANCIAL ASSISTANCE  
901 SOUTH STEWART STREET SUITE 4001  
CARSON CITY NV 89701  
RETURN SERVICE REQUESTED

PRSRT STD  
U.S. POSTAGE PAID  
CARSON CITY, NV 89701  
PERMIT NO. 15

## Water Lines

Fall 2014

NV Water and Wastewater Operator's Forum Members:	Training Contacts
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